I claim:

1. A telephone switching system for facilitating and controlling voice and data communication among and between telephone sets, both internal to said system and external to said system, said system comprising:

a telephone exchange switch having means for forming predetermined messages;

a voice mail system in electronic communication with said telephone exchange switch using a data communications link for message exchange between said telephone exchange switch and said voice mail system, said data link being in addition to a voice link between said telephone exchange switch and said voice mail system said voice mail system including means for forming predetermined messages for said message exchange; and

at least one telephone set in electronic communication with said telephone exchange switch, said telephone set including means for displaying alphanumeric characters in a human readable form, said means for displaying being operable responsive to at least one message received from said telephone exchange switch resulting from said message exchange between said telephone exchange switch and said voice mail system, said telephone set further including at least one manual switch for sending a signal to said telephone exchange switch responsive to said message received from said telephone exchange switch resulting from said message exchange between said telephone exchange switch and said voice mail system, said signal being indicative of a predetermined response to said message from said voice mail system.

2. A telephone switching system according to claim 1 wherein said data communications link is a serial communications link.

3. A telephone switching system according to claim 1 wherein means for forming predetermined messages for said message exchange includes preprogrammed computer processors; said means for displaying alphanumeric characters in a human readable form includes a display device associated with said telephone set for displaying messages from said voice mail system directed to a user of said telephone set to convey information regarding conditions associated with said voice mail system; and said at least one manual switch is operatively associated with a displayed message for a predetermined user response.

4. A telephone switching system according to claim 1 wherein said voice mail system includes means for obtaining a calling party's number from an incoming telephone signal, said means for forming predetermined messages includes means for forming a message for data transmission to said telephone exchange switch to cause said display device to display characters indicative of said calling party's number.

5. A telephone switching system according to claim 4 wherein said means for obtaining a calling party's number from an incoming telephone signal includes means for selectively prompting a caller to enter predefined digits, and said means for obtaining a calling party's number from an incoming telephone signal includes means for collecting said predefined digits for transmission to said

telephone set through said data link and said telephone exchange switch for display on said display device.

6. A telephone switching system according to claim 1 wherein said voice mail system includes means for obtaining a calling party's number from an incoming telephone signal and said means for forming predetermined messages includes means for forming a message for data transmission to said telephone exchange switch to cause said display device to display characters indicative of said calling party's number and of a response message, wherein activation of said at least one manual switch causes transmission of said predetermined response message.

7. A telephone switching system according to claim 1 wherein said voice mail system includes means for controlling said means for displaying alphanumeric characters in a human readable form in the absence of a connection between a telephone set and a mailbox associated with said telephone set.

8. A telephone switching system according to claim 1 wherein said system includes a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system, each said message location being accessible by a respective telephone set for communication therebetween, said system further comprising means for distributing a message from a first telephone set for receipt by at least one second telephone set without said first telephone set having accessed a designated message location associated therewith, said message being deliverable to

a message location associated with said at least one second telephone set using said data link responsive to a user of said first telephone set activating said at least one manual switch.

9. A telephone switching system according to claim 8 wherein said message is a voice memo directed from said first telephone set to said second telephone set and said switch includes means to initiate a call to said voice mail system, said call including a designated message location associated with said second telephone set.

10. A telephone switching system according to claim 1 wherein said system includes an automated call distribution system associated with said voice mail system and a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system, each said message location being accessible by a respective telephone set for communication therebetween, said system further comprising means for determining a state associated with each said telephone set being controlled by said automated call distribution system, said state defining whether each said telephone being controlled by said automated call distribution system is in a busy condition and means for communicating said state for each telephone set being controlled by said automated call distribution system to said voice mail system as a state message using said data link , said voice mail system further including means for monitoring each said state message and transferring

incoming telephone calls to telephone sets for which said respective state message indicates as being idle.

11. A telephone switching system according to claim 10 wherein said voice mail system includes means for selectively initiating and stopping said generation of each said state message for any specific extension and wherein said switch includes means for determining whether each said telephone set being controlled by said automated call distribution system changes from an idle condition to a busy condition and, upon detection of said change, transmitting said state message to said voice mail system.

12. A telephone switching system according to claim 1 wherein said system includes an automated call distribution system associated with said voice mail system and a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system, wherein said voice mail system includes means for controlling information displayed on said display device operable by a user of at least one said telephone set without said at least one telephone set being interconnected by a voice connection to its respective message location.

13. A telephone switching system according to claim 12 wherein said means for controlling information displayed on said display device includes means for sending an initial message to open said display device, at least one message to

provide information regarding said automated call distribution system, and a message to close said display device.

14. A telephone switching system according to claim 1 wherein said system includes a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system, said system further comprising means for supplying information regarding each respective telephone set from said switch to said voice mail system for updating information used by said voice mail system with respect to each said telephone set.

15. A telephone switching system according to claim 14 wherein said voice mail system maintains a database of information relating to each said telephone set and a respective designated message location thereof, and said means for supplying information regarding each respective telephone set includes means for supplying information to update said database.

16. A telephone switching system according to claim 1 wherein said telephone exchange switch is a first telephone exchange switch, said system further comprising:

a second telephone exchange switch remotely disposed from said first telephone exchange switch;

means for electronically connecting said second telephone exchange switch to said first telephone exchange switch through the internet;

at least one second telephone set in electronic communication with said second telephone exchange switch, said second telephone set including means for displaying alphanumeric characters in a human readable form, said means for displaying being operable responsive to at least one message received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system, through the internet and said first telephone exchange switch, said second telephone set further including at least one manual switch for sending a signal to said second telephone exchange switch responsive to said message received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system through the internet and said first telephone exchange switch, said signal being indicative of a predetermined response to said message from said voice mail system.

17. A computer implemented method for operating a telephone switching system for facilitating and controlling voice and data communication among and between telephone sets, both internal to said system and external to said system, said method comprising the steps of:

providing a telephone exchange switch having means for forming predetermined messages;

providing a voice mail system in electronic communication with said telephone exchange switch using a data communications link for message exchange between said telephone exchange switch and said voice mail system said voice mail system including means for forming predetermined messages;

providing at least one telephone set in electronic communication with said telephone exchange switch, said telephone set including means for displaying alphanumeric characters in a human readable form, said means for displaying being operable in response to at least one message received from said telephone exchange switch resulting from said message exchange between said telephone exchange switch and said voice mail system, said telephone set including at least one manual switch operatively associated with said means for displaying;

forming predetermined messages for said message exchange using said voice mail system and said telephone exchange switch;

exchanging said predetermined messages between said voice mail system and said telephone exchange switch; and

operating said means for displaying responsive to at least one message received from said telephone exchange switch resulting from said message exchange between said telephone exchange switch and said voice mail system.

18. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method further includes the step of:

sending a signal using said at least one manual switch, said message being sent to said telephone exchange switch in response to said message received from said telephone exchange switch resulting from said message exchange between said telephone exchange switch and said voice mail system, said signal being indicative of a predetermined response to said message received from said telephone exchange switch.

19. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method further includes the steps of:

providing preprogrammed computer processors as said means for forming predetermined messages for said message exchange;

providing a display device as said means for displaying alphanumeric characters in a human readable form, said display device being associated with said telephone set;

displaying messages from said voice mail system directed to a user of said telephone set to convey information regarding conditions associated with said voice mail system;

providing at least one manual switch being operatively associated with a displayed message for a predetermined user response; and

responding to said conveyed information using said at least one manual switch.

20. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method further includes the steps of:

obtaining a calling party's number from an incoming telephone signal, using said voice mail system;

forming a predetermined message for data transmission to said telephone exchange switch using said voice mail system; and

transmitting said predetermined message to said telephone exchange switch to cause said display device to display characters indicative of said calling party's number.

21. A computer implemented method for operating a telephone switching system according to claim 20 wherein said step of obtaining a calling party's number from an incoming telephone signal includes prompting a caller to enter predefined digits, collecting said predefined digits for transmission to said telephone set through said data link and said switch for display on said display device.

22. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method includes the steps of:

obtaining a calling party's number from an incoming telephone signal using said voice mail system;

forming a predetermined message for data transmission to said telephone exchange switch to cause said display device to display characters indicative of said calling party's number and of a response message;

transmitting said predetermined message to said telephone exchange switch to cause said display device to display characters indicative of said calling party's number; and

transmitting said predetermined response message using said at least one manual switch.

23. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method includes the step of controlling said means for displaying alphanumeric characters in a human readable form using said voice mail system in the absence of a connection between a telephone set and a mailbox associated with said telephone set.

24. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method further includes the steps of:

providing a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system, each said message location being accessible by a respective telephone set for communication therebetween;

creating a voice memo using a first said telephone set;

distributing said voice memo from said first telephone set for receipt by at least one second telephone set without said first telephone set having accessed a designated message location associated therewith, said message being deliverable to a message location associated with said at least one second telephone set using

said data link responsive to a user of said first telephone set activating said at least one manual switch.

25. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method includes the steps of:

providing an automated call distribution system associated with said voice mail system and a plurality of telephone sets connected to said telephone exchange switch; each of said telephone sets having a designated message location associated with said voice mail system, each said message location being accessible by a respective telephone set for communication therebetween;

determining a state associated with each said telephone set being controlled by said automated call distribution system using said telephone exchange switch, said state defining whether each said telephone being controlled by said automated call distribution system is in a busy condition;

communicating said state for each telephone set being controlled by said automated call distribution system to said voice mail system as a state message using said data link ;

monitoring each said state message and transferring incoming telephone calls to telephone sets for which said respective state message indicates as being idle, said monitoring and transferring being performed by said voice mail system.

26. A computer implemented method for operating a telephone switching system according to claim 25 wherein said method includes the steps of:

selectively initiating and stopping said generation of each said state message for any specific station using said voice mail system;

determining whether each said telephone set being controlled by said automated call distribution system changes from an idle condition to a busy condition using said telephone exchange switch; and

transmitting, upon detection of said change, said state message to said voice mail system.

27. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method includes the steps of:

providing an automated call distribution system associated with said voice mail system and a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system; and

controlling information displayed on said display device by a user of at least one said telephone set using said voice mail system without said at least one telephone set being interconnected by a voice connection to its respective message location.

28. A computer implemented method for operating a telephone switching system according to claim 27 wherein said step of controlling information displayed on said display device includes:

sending an initial message to open said display device;

sending at least one message to provide information regarding said automated call distribution system; and

sending a message to close said display device.

29. A computer implemented method for operating a telephone switching system according to claim 17 wherein said method includes the steps of:

providing a plurality of telephone sets connected to said telephone exchange switch, each of said telephone sets having a designated message location associated with said voice mail system;

supplying information regarding each respective telephone set from said switch to said voice mail system for updating information used by said voice mail system with respect to each said telephone set.

30. A computer implemented method for operating a telephone switching system according to claim 17 wherein step of providing a telephone exchange switch includes providing a first telephone exchange switch and said method further includes the steps of:

providing a second telephone exchange switch remotely disposed from said first telephone exchange switch;

providing means for electronically connecting said second telephone exchange switch to said first telephone exchange switch through the internet;

providing at least one second telephone set in electronic communication with said second telephone exchange switch, said second telephone set including means for displaying alphanumeric characters in a human readable form, said means for displaying being operable responsive to at least one message

received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system, through the internet and said first telephone exchange switch, said second telephone set further including at least one manual switch for sending a signal to said second telephone exchange switch responsive to said message received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system through the internet and said first telephone exchange switch, said signal being indicative of a predetermined response to said message;

connecting said second telephone exchange switch with said first telephone exchange switch using said internet connection;

forming predetermined messages for said message exchange using said voice mail system and said second telephone exchange switch;

exchanging said predetermined messages between said voice mail system and said second telephone exchange switch through said first telephone exchange switch and said internet connection; and

operating said means for displaying responsive to at least one message received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system.

SUB A3

31. A computer implemented method for operating a telephone switching system according to claim 30 wherein said method further includes the step of:

sending a signal using said at least one manual switch, said message being sent to said second telephone exchange switch in response to said message received from said second telephone exchange switch resulting from said message exchange between said second telephone exchange switch and said voice mail system through said first telephone exchange switch and said internet connection, said signal being indicative of a predetermined response to said message received from said second telephone exchange switch.